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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/708,590

11/09/2000

Masato Muraki

35.G2732

2106

5514

7590

05/19/2004

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EXAMINER

FERNANDEZ, KALIMAH

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/708,590		MURAKI ET AL.	
	Examiner		Art Unit	
	Kalimah Fernandez		2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-14 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 5,973,332 issued to Muraki et al and US Pat No 5,863,682 issued to Abe et al.
3. Muraki et al teach a charged particle beam exposure apparatus that draws a pattern on an object to be exposed by irradiating a plurality of charged particle beams to the object based on drawing data (col.4, lines 26-39).
4. Muraki et al teach a storage device for storing irradiation data/duty of each of the plurality of the charged particle beams (col.17, lines 59-62).
5. Muraki et al teach a calibration data (col.27, lines 9-14).
6. Muraki et al does not teach proximity effect correction data and computing device.

7. However, Abe et al teach proximity effect correction data for reducing an influence of a proximity effect (col.20, lines 44-48); calibration data for irradiation dose variations (col.5, line 61-col.6, line 35); and computing device for correcting the standard data with the calibration data (col.12, lines 1-15).

8. It would have been obvious to an artisan having ordinary skill to combine Muraki et al and Abe et al because Abe et al teach the desirability of exposure dose correction for correcting for proximity effect (col.1, lines 12-17; col.2, lines 57-64).

1. Therefore, a controller adapted to control Muraki et al's apparatus based on proximity effect correction data and standard dose data would have been obvious at the time this invention was made.

2. As per claims 2-3, Abe et al teaches a bit map (col.16, lines 2-10; col.34, lines 11-18).

3. As per claim 4, Muraki et al teaches an obtaining means for obtaining calibration data (col.30, lines 21-48).

4. As per claim 5, Muraki et al teaches faraday cup (col.8, lines 63-64).

5. As per claim 6, Muraki et al teaches a selecting means (col.13, lines 48-58).

6. As per claim 15, both Muraki et al and Abe et al teach producing a wafer on which a pattern has been exposed (see col.1, lines 7-10 of Abe et al; col.1, lines 6-15 of Muraki et al).

Election/Restrictions

7. Newly submitted claim 20 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the originally-filed invention is directed to data storage wherein claim 20 is directed to charged particle beam exposure apparatus having a blanker array.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 20 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Allowable Subject Matter

8. Claims 7-14 are allowed. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach the claimed invention. (See previous action mailed on 12-2-03 for details).

Response to Arguments

9. Applicant's arguments filed 3-2-04 have been fully considered but they are not persuasive. In response to applicant's argument that Abe et al fails to teach calibrating variations in an irradiation dose as in claim 1, the test of prima facie obviousness is what the combination of cited disclosures taken, as a whole would suggest to one of ordinary skill in the art. Here, Abe et al teach calibrating data for irradiation dose variations (col.5, line 61-col.6, line 35) wherein Muraki et al teach a multi-beam apparatus. The combination of these disclosures is obvious as discussed and encompasses the claimed invention of correcting the beam variation among the multi-electron exposure because it is a natural, obvious extension of Abe et al to correct the variations among the multi-beam apparatus.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE**

FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 571-272-2420. The examiner can normally be reached on Mon-Tues 6:30-3:30; Wed-Thurs 8-5 and Fri.9am-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 571-272-2477. The

fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KF


JOHN R. LEE
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